

Abstract of the Disclosure

QUAD AWARE LOCKING PRIMITIVE

A method and computer system for efficiently handling high contention locking in a multiprocessor computer system. The method organizes at least some of the processors in the system into a hierarchy, and processes an interruptible lock in response to the hierarchy. The method utilizes two alternative methods of acquiring the lock, including a conditional lock acquisition primitive and an unconditional lock acquisition primitive, and an unconditional lock release primitive for releasing the lock from a particular processor. In order to prevent races between processors requesting a lock acquisition and a processor releasing the lock, a release flag is utilized. Furthermore, in order to ensure that the a processor utilizing the unconditional lock acquisition primitive is granted the lock, a handoff flag is utilized. Accordingly, efficiency of a computer system may be enhanced with the ability to utilize a locking primitive for an interruptible lock that determines lock selection among processors based upon a hierarchical position of the processor and the primitive utilized for lock selection.